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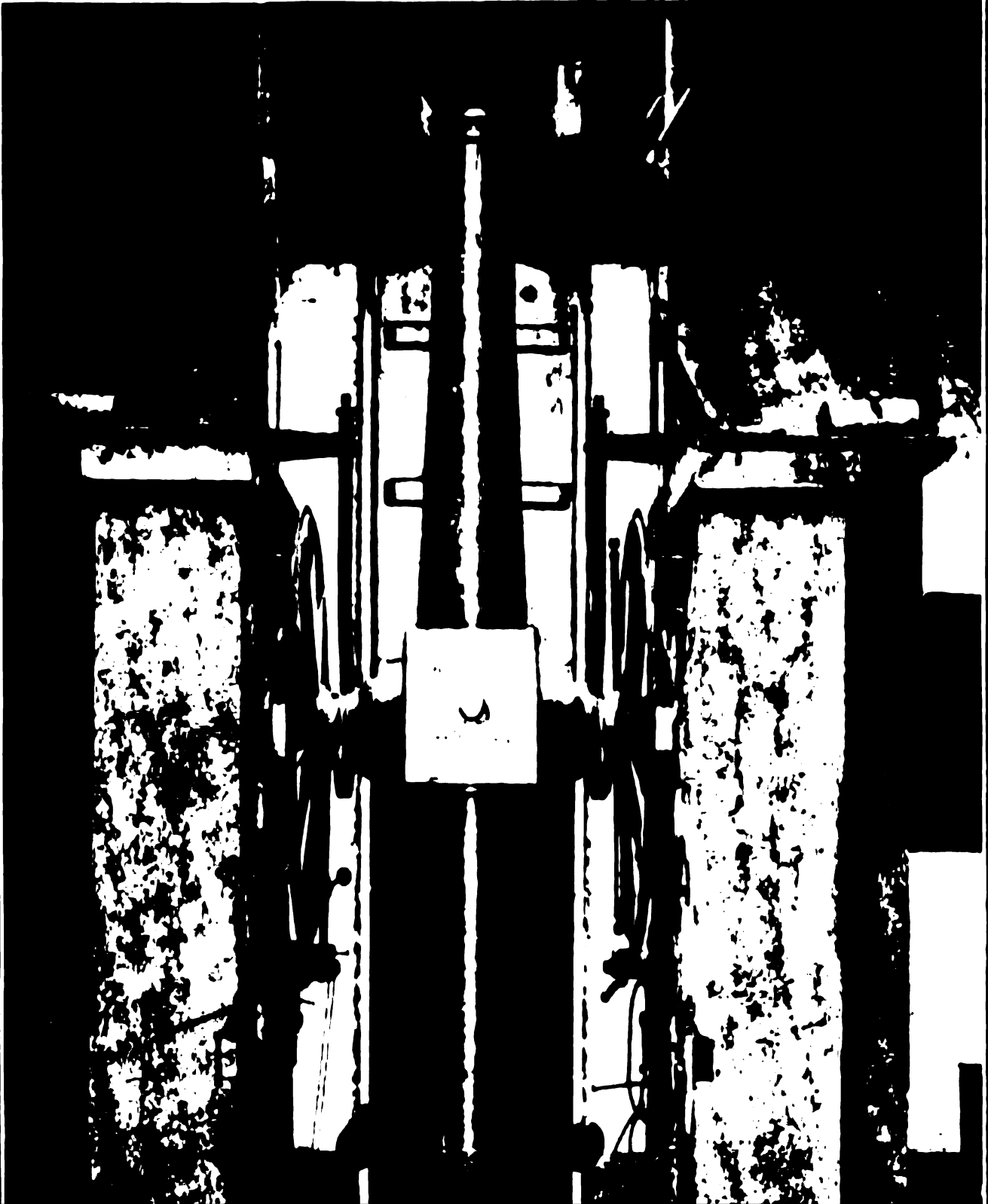
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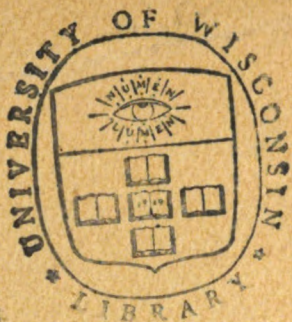
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THE ADMINISTRATION BUILDING OF THE CARNEGIE INSTITUTION OF WASHINGTON

The Carnegie Institution of Washington

Founded by Andrew Carnegie

SCOPE AND ORGANIZATION



**Issued on the Occasion of the Dedication of the
Administration Building at Washington
December 13, 1909**



AS
+ 10
- 100

Present Organization of the Institution.

ROBERT S. WOODWARD, *President.*

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JOHN L. CADWALADER.	WILLIAM B. PARSONS.
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EXECUTIVE COMMITTEE: WILLIAM H. WELCH, *Chairman*; JOHN S. BILLINGS,
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Besides the names enumerated above, the following were ex-officio members of the Board of Trustees under the original charter, from the date of organization until April 28, 1904 :

The President of the United States.

The President of the Senate.

The Speaker of the House of Representatives.

The Secretary of the Smithsonian Institution.

The President of the National Academy of Sciences.

PLAN AND SCOPE OF THE INSTITUTION.

The Carnegie Institution of Washington was founded by Mr. Andrew Carnegie, January 28, 1902, when he gave to a board of trustees \$10,000,000 in registered bonds, yielding 5 per cent annual interest. To this endowment fund an addition of \$2,000,000 was made by Mr. Carnegie on December 10, 1907. The Institution was originally organized under the laws of the District of Columbia as the Carnegie Institution. Subsequently, however, it was incorporated, by an act of Congress approved April 28, 1904, under the title of the Carnegie Institution of Washington. The articles of incorporation declare, in general, "that the objects of the corporation shall be to encourage in the broadest and most liberal manner investigation, research, and discovery, and the application of knowledge to the improvement of mankind."

By the second act of incorporation the Institution was placed under the control of a board of twenty-four Trustees, all of whom had been members of the original board referred to above.

The Trustees meet annually in December to consider the affairs of the Institution in general, the progress of work already undertaken, the initiation of new projects, and to make the necessary appropriations for the ensuing year. During the intervals between the meetings of the Trustees the affairs of the Institution are conducted by an Executive Committee, chosen by and from the Board of Trustees, acting through the President of the Institution as chief executive officer.

Since the object of the Institution is the promotion of investigation "in the broadest and most liberal manner," many projects in widely different fields of inquiry have been considered, or are

under consideration, by the Executive Committee. These projects are chiefly of three classes, namely :

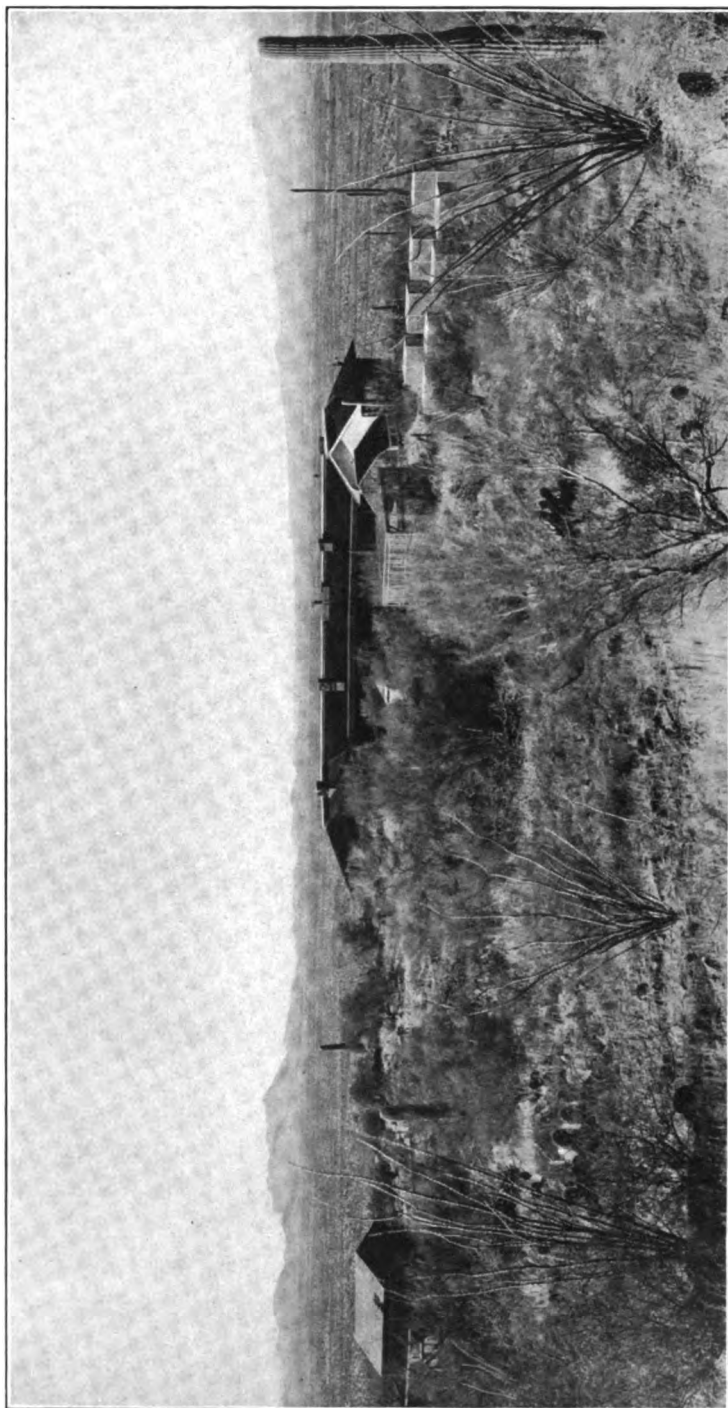
First, large projects or departments of work whose execution requires continuous research by a corps of investigators during a series of years. Ten such departments have been established by the Institution. The designations of these departments and the names and addresses of their directors, along with brief indications of their origin, development, and present status, are given in the following pages.

Secondly, minor projects, which may be carried out by individual experts in a limited period of time. Many grants in aid of this class of projects have been made.

Thirdly, research associates and assistants. Under this head, aid has been given to a considerable number of investigators possessing exceptional abilities and opportunities for research work.

PUBLICATIONS.

Besides the ten departments of work previously referred to, a division of publications has been organized, under the direction of Mr. William Barnum, as editor. An annual appropriation is made for the purpose of publishing the results of investigations made under the auspices of the Institution and for certain works which would not otherwise be readily printed. The publications of the Institution (which are necessarily restricted to editions of 1,000 copies or less) and the annual reports or Year Books are not distributed gratis except to a limited list of the greater libraries of the world. Other copies are offered for sale at prices only sufficient to cover the cost of publication and transportation to purchasers.



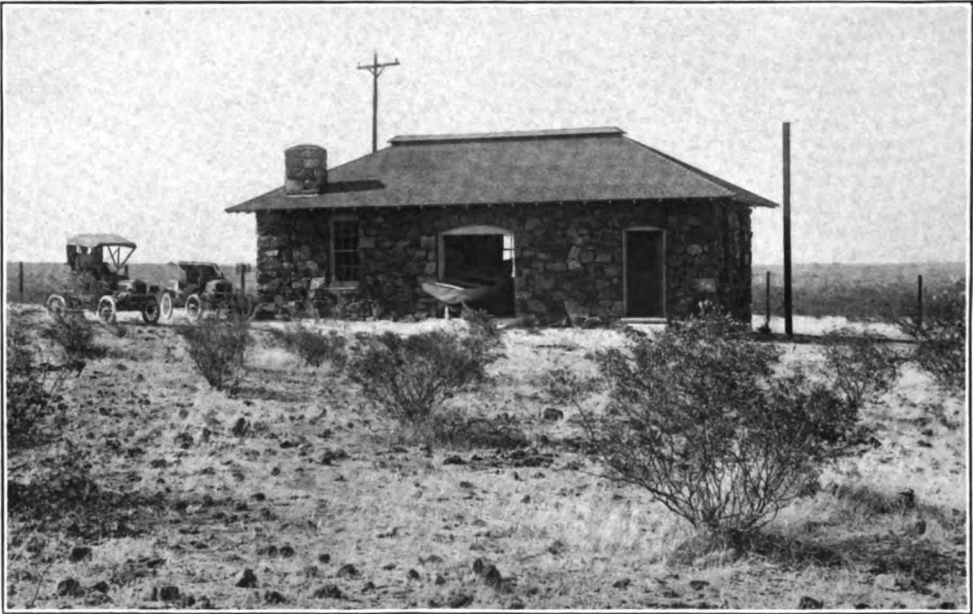
Main Building, Desert Laboratory, Tucson, Arizona.

DEPARTMENT OF BOTANICAL RESEARCH.

Director, DR. D. T. MACDOUGAL.

Address, Desert Laboratory, Tucson, Arizona.

This Department was formally established December 12, 1905. Three years previously, however, the Board of Trustees authorized the construction of a laboratory at Tucson, Arizona, for the special needs of botanical research in desert areas. This lab-



Shop of Desert Laboratory, Tucson.

oratory was completed during the year 1903, in accordance with plans drawn up by Mr. F. V. Coville and Dr. D. T. MacDougal, who served as an advisory committee on the conduct of work at the laboratory until the present organization was effected.

The Department has the following equipment in buildings:

At Tucson, Arizona :

1. Main laboratory, of stone.
2. Shops, of stone.
3. Adobe laboratory on experimental grounds in valley of Santa Rita River.
- 4-5. Water reservoirs, of stone.

At Carmel, California :

6. Frame laboratory.

The last-named building is a gift to the Department from the Carmel Development Company. Its situation on the Pacific Coast makes this building especially useful for the conduct of the investigations of the Department during the hotter summer months. The main laboratory at Tucson is located in a land reservation of about 800 acres, well covered with characteristic desert vegetation. In addition, the Department has reservations for plantations in the Santa Catalina Mountains of Arizona and stations for observations on the growth of vegetation at various points in the desert areas of the southwestern states and the adjacent areas of Mexico. The altitudes of these reservations and stations range from below sea level, at Salton Sea, California, to 8,000 feet in the Santa Catalina Mountains, Arizona.

DEPARTMENT OF EXPERIMENTAL EVOLUTION.

Director, PROFESSOR CHARLES B. DAVENPORT.

Address, Cold Spring Harbor, Long Island, N. Y.

After the subject of research in biology had been under consideration for nearly two years, a plan for the establishment and maintenance of a station for experimental evolution was approved in December, 1903. This plan was submitted to the Institution by Professor Charles B. Davenport in May, 1902.

Early in 1904, a lease of a tract of land of about 10 acres, located at Cold Spring Harbor, Long Island, New York, was obtained from the Wawepex Society for a term of fifty years. Professor Davenport was appointed Director of the station, the erection of a main laboratory building was begun, and on June 11, 1904, the station was formally opened. In January, 1906, the official designation of Department of Experimental Evolution was adopted.

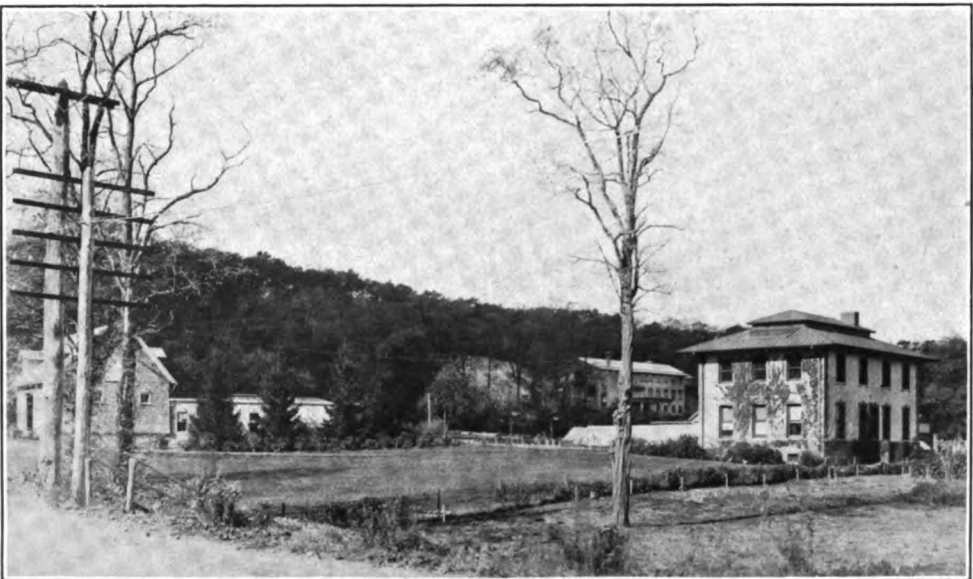
The Department has the following equipment in buildings :

1. Main laboratory and office building.
2. Director's residence.
3. Stable.
- 4-7. Greenhouses.
8. General purpose shed.
9. Brooder house.
10. Carpenter shop.
11. Cat house.
12. Shelter for boats.
13. Ice house.

For the purpose of marine collecting a naphtha launch is provided.



General View of Station of Department of Experimental Evolution, Cold Spring Harbor.



Principal Buildings of Station for Experimental Evolution, Cold Spring Harbor.

On April 5, 1909, the Institution purchased for the Department of Experimental Evolution a small island in Long Island Sound, known as Goose Island, for the conduct of investigations on plants and animals in a state of isolation.



Winter View at Cold Spring Harbor Station.

DEPARTMENT OF ECONOMICS AND SOCIOLOGY.

Chairman, PROFESSOR HENRY W. FARNAM.

Address, 43 Hillhouse Avenue, New Haven, Connecticut.

In 1902, upon the recommendation of an advisory committee on economics, a preliminary appropriation was made for the preparation of a social and economic history of the United States and a body of collaborators was selected to undertake this task. After further consideration of the project during the year 1903, more matured recommendations, submitted by Dr. Carroll D. Wright, for the organization and conduct of the Department, were approved, and Dr. Wright was appointed Director. The work was divided into 12 sections, as follows: Population and Immigration, Agriculture and Forestry, Mining, Manufactures, Transportation, Domestic and Foreign Commerce, Money and Banking, The Labor Movement, Industrial Organization, Social Legislation, Federal and State Finance including Taxation, and The Negro in Freedom and in Slavery.

As an aid to the collaborators, provision was made in December, 1906, for the compilation and publication of an index of the economic materials in the public documents of the states of the United States. This work has been carried on under the auspices of the Department by Miss Adelaide R. Hasse, of the New York Public Library, and volumes for the states of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, New York, California, Illinois, and Kentucky have been published.

After the death of Dr. Wright, on February 20, 1909, Professor Henry W. Farnam, who had hitherto acted as secretary of the board of collaborators, was appointed chairman of this board, and as such has since had general charge of the affairs of the Department.

GEOPHYSICAL LABORATORY.

Director, DR. ARTHUR L. DAY.

Address, Geophysical Laboratory, Upton Street, Washington, D. C.

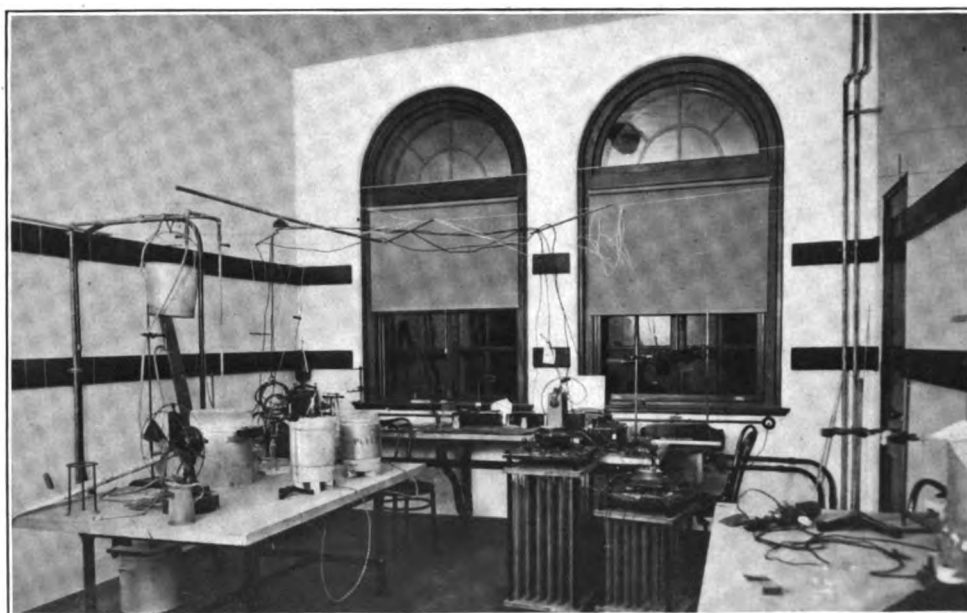
Investigations to determine the modes of formation and the physical properties of the rocks of the earth's crust were begun under the auspices of the Institution in 1904, when grants were made for special researches carried on in Washington at the office of the U. S. Geological Survey, by Dr. G. F. Becker and Dr. Arthur L. Day.

In December, 1905, estimates for the erection and equipment of a special laboratory for the experimental work carried on by Dr. Day were formally approved. A site of five acres on an isolated hill, east of Connecticut Avenue and north of Pierce's Mill Road, in the subdivision known as Azadia, District of Columbia, was purchased, and a contract for construction of the laboratory was let July 6, 1906. Dr. Day was appointed Director of the laboratory and he with his staff took possession of the completed building July 1, 1907.

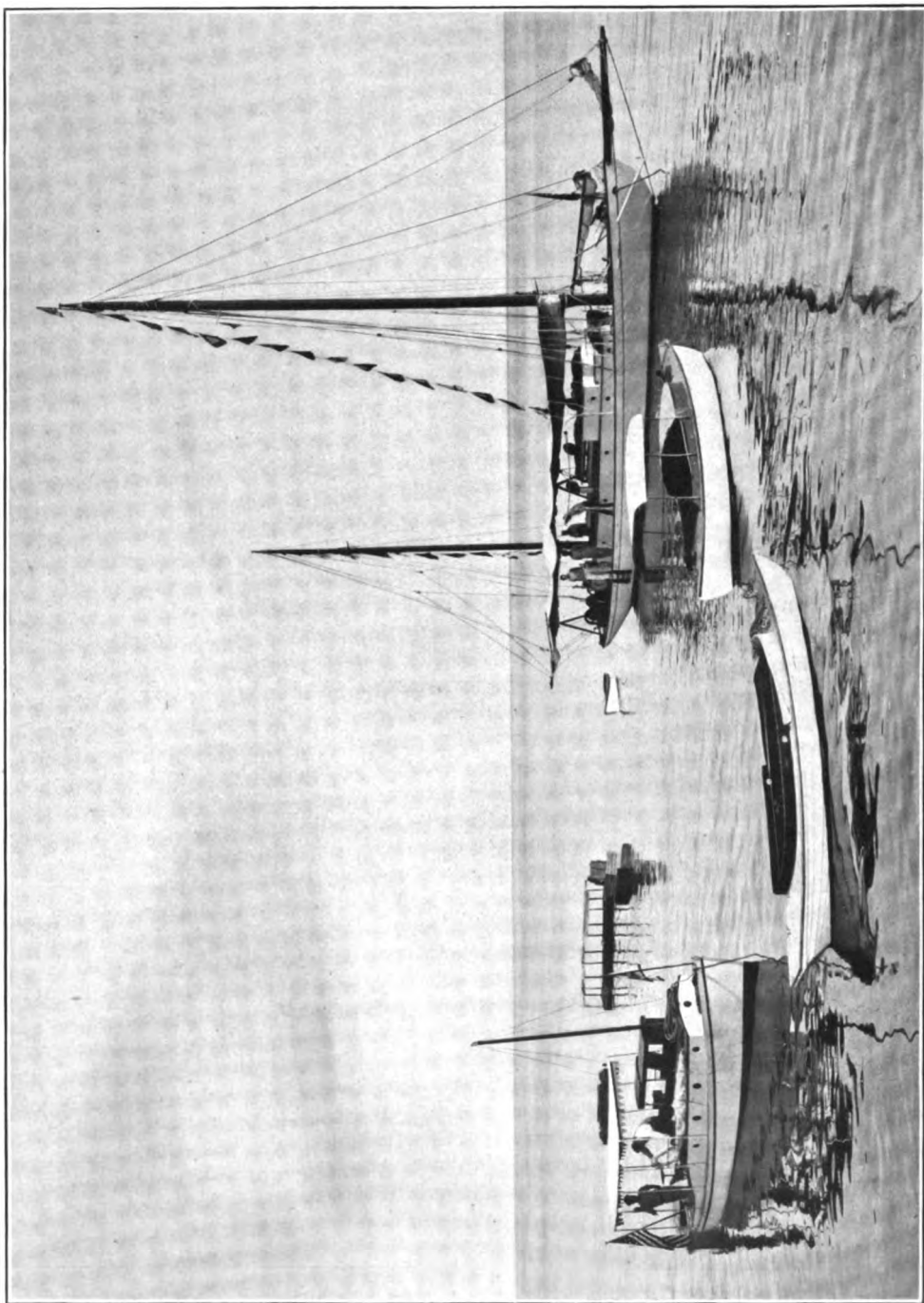
This laboratory has many novel features of construction and equipment. It is specially well provided with apparatus for chemical, physical, and optical work in mineralogy, and with apparatus for the study of materials subject to such high temperatures and high pressures as obtain in the formation of rocks and minerals in the earth's crust.



The Geophysical Laboratory, Upton Street, Washington.



Room in Geophysical Laboratory.



Fleet of the Marine Biological Laboratory, Tortugas, Florida.

DEPARTMENT OF MARINE BIOLOGY.

Director, DR. ALFRED G. MAYER.

Address, Tortugas, Florida.

In December, 1903, provision was made for the establishment of a marine biological laboratory, and Dr. Alfred G. Mayer was appointed Director thereof. Early in 1904, the United States Department of Commerce and Labor and the United States Lighthouse Board granted to the Institution a lease of a favorable



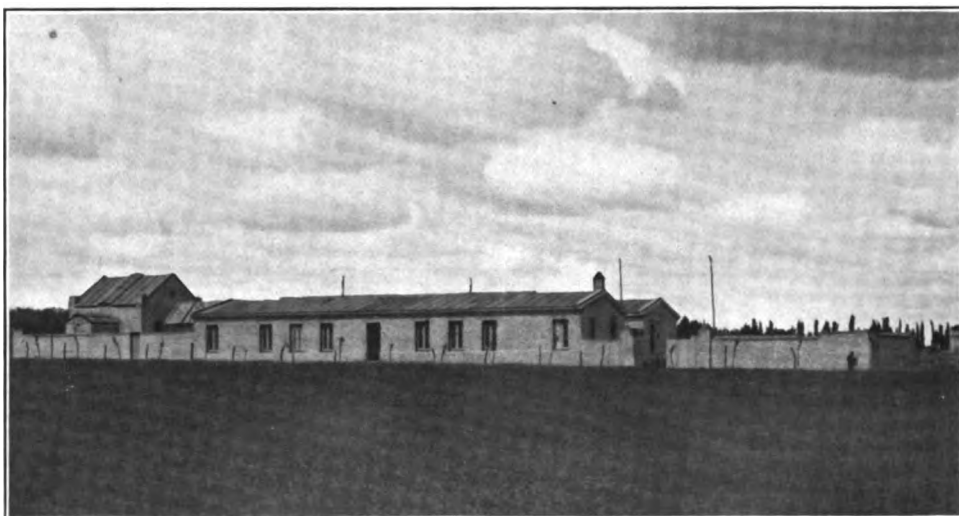
Main Building, Tortugas Laboratory.

site on Loggerhead Key, Dry Tortugas, Florida, in a region remarkable for its abundance of marine life. In July of that year portable buildings were erected on the west side of the key and preparations were made to proceed with the work of investigation. In January, 1906, the designation of Department of Marine Biology was given to this work.

The Department has the following equipment in buildings and boats:

- | | |
|------------------------------|------------------------|
| 1. Main laboratory building. | 6. Yacht "Physalia." |
| 2. Aquarium. | 7. Launch "Sea Horse." |
| 3. Kitchen. | 8. Launch "Vellela." |
| 4. Store room and dormitory. | 9. Launch "Porpoise." |
| 5. Dock. | 10-11. Row boats. |

Owing to the dangers from tropical storms the laboratory is occupied annually only from April to July. Special facilities are offered to eminent naturalists for the conduct of researches at this laboratory. During the five years of active work of the department these facilities have been extended to twenty-nine investigators, and ten of these have spent two or more seasons at the laboratory.



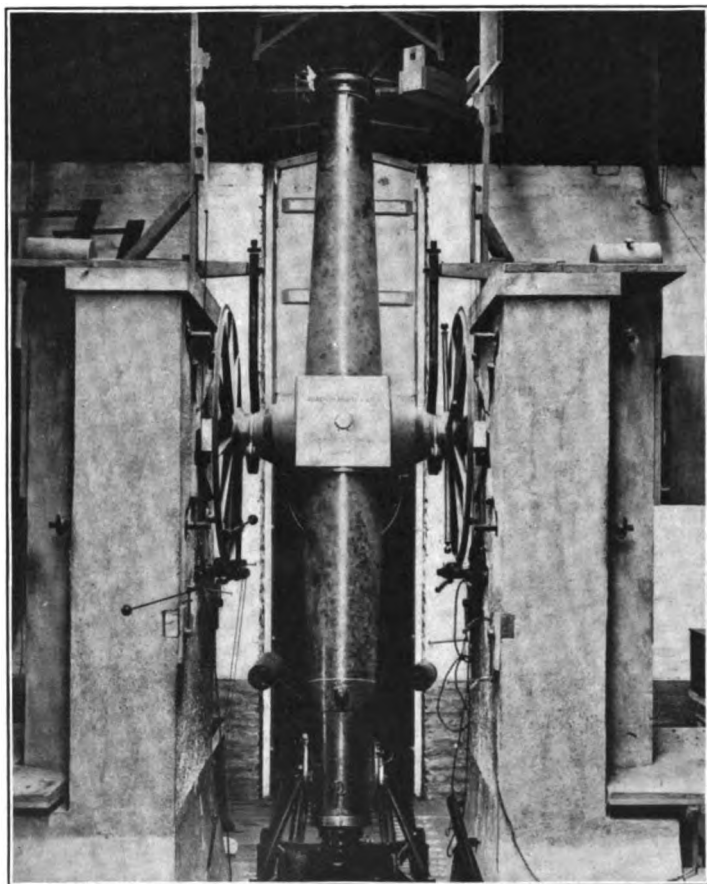
Southern Observatory, Department of Meridian Astrometry, San Luis, Argentine Republic. View from Northwest.

DEPARTMENT OF MERIDIAN ASTROMETRY

Director, PROFESSOR LEWIS BOSS.

Address, Dudley Observatory, Albany, N. Y.

A special advisory committee on astronomy, of which Professor Lewis Boss, Director of the Dudley Observatory, was chairman, recommended, in a report published in the Year Book of the Institution for 1903, the establishment of a temporary meridian



Transit-circle, Southern Observatory, San Luis, Argentine Republic.

observatory in the southern hemisphere. The ultimate object in view in making this recommendation was to secure accurate measures of the positions of the fixed stars visible in the southern hemisphere and to use these, in connection with corresponding measures made at observatories in the northern hemisphere, to produce finally a complete catalogue of precision of all stars from the brightest down to those of the seventh magnitude inclusive for the entire celestial sphere.

Preliminary to this undertaking special grants were made to Professor Boss during the year 1904-1905; and in December, 1905, the establishment of an observatory in the southern hemisphere was approved and the execution of the project placed in charge of Professor Boss. In March, 1907, this branch of work was designated the Department of Meridian Astrometry, and Dr. Boss was formally appointed Director.

Through the courtesy of the government of Argentina, the Southern Observatory was located on national land belonging to the Escuela Regional in San Luis, in latitude south $33^{\circ} 18'$ and in longitude west $4^{\text{h}} 25^{\text{m}} 25^{\text{s}}$, on the east Andean plateau, and at an altitude of about 2,500 feet.

The buildings for the observatory and the quarters for the resident staff were erected during the winter of 1908-1909. The instrumental equipment was supplied from the Dudley Observatory, Albany, New York, and the work of observing was begun in April, 1909. The principal instrument used is a meridian transit, by means of which the positions, or right ascensions and declinations, of stars may be measured as they cross the meridian. The Department has the following buildings at San Luis, Argentina :

- | | |
|--------------------------|---------------------|
| 1. Transit-circle house. | 3. Office building. |
| 2. Photometer shed. | 4. Dormitory. |

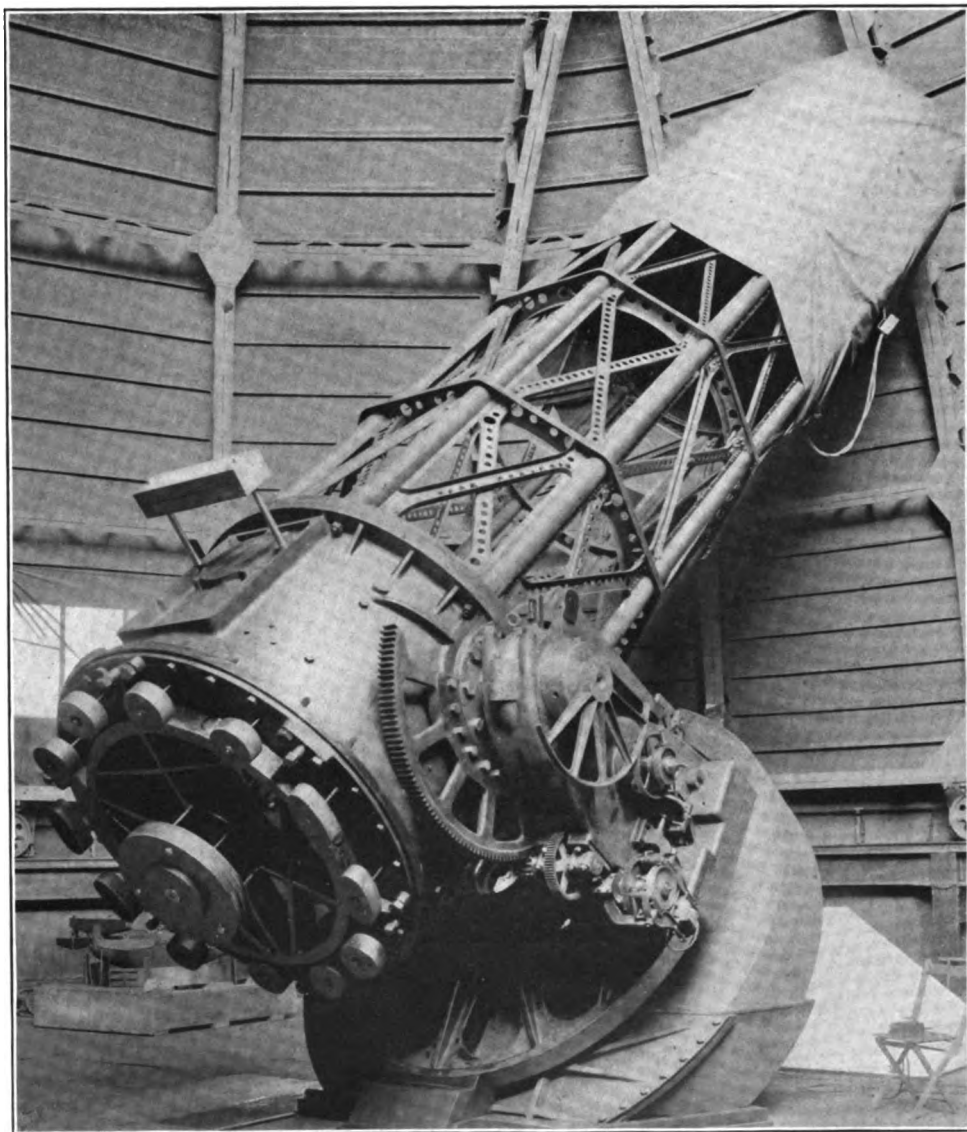
DEPARTMENT OF HISTORICAL RESEARCH.

Director, PROFESSOR J. FRANKLIN JAMESON.

Address, Bond Building, Washington, D. C.

In the summer of 1902, a committee of the American Historical Society submitted to the Institution a memorial suggesting methods for the promotion of historical research. This memorial was followed by a report of a special advisory committee on history, and in February, 1903, a department of historical research was temporarily organized under the directorship of Professor A. C. McLaughlin. It was originally designated the Bureau of Historical Research. Professor McLaughlin continued his services as Director until October 1, 1905, when he resigned and was succeeded by Professor J. Franklin Jameson. At the same time, also, the present designation of the Department was adopted in place of the original title.

This Department is chiefly occupied with the preparation of publications intended to assist investigators in American history. It issues reports, aids, and guides with respect to historical documents hitherto unclassified and relatively inaccessible. In addition to the sources of American history available in the United States, the sources in foreign archives are also being explored and catalogued. This work has already been extended to archives in Canada, Cuba, Mexico, Great Britain, France, Germany, Italy, and Spain.



Sixty-inch Reflecting Telescope of Solar Observatory.

SOLAR OBSERVATORY.

Director, PROFESSOR GEORGE E. HALE.

Address, Solar Observatory, Pasadena, California.

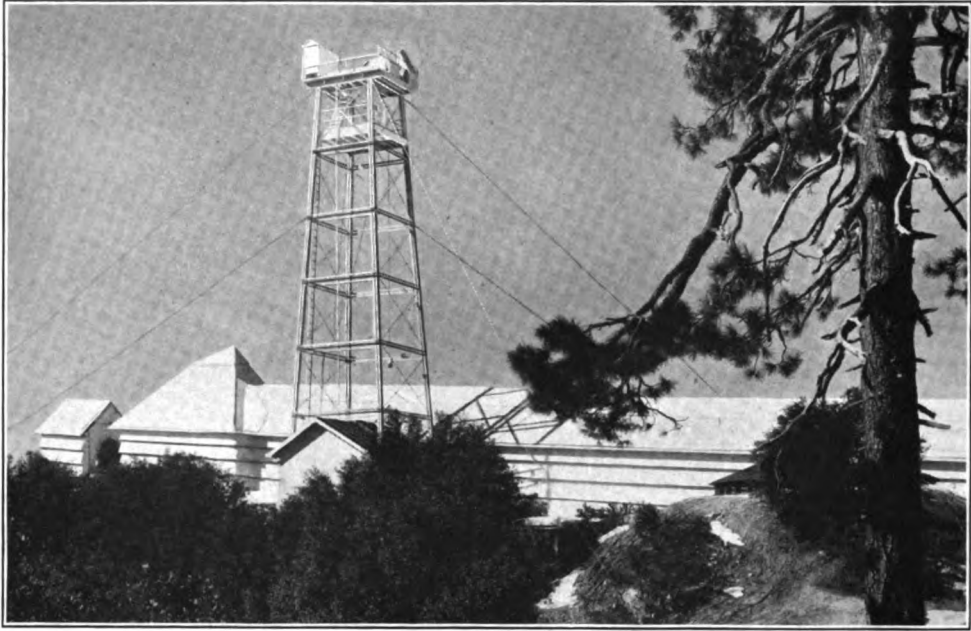
The Solar Observatory has been developed from suggestions and recommendations made in a report from an advisory committee published in 1902 in the first Year Book of the Institution. The late Professor S. P. Langley, a member of this committee, urged especially the desirability of establishing such an observatory in some elevated sub-tropical locality. Professor George E. Hale, also a member of the committee, called attention likewise to the importance of additional direct studies of the sun and to their bearings on the more general problems of stellar evolution. He recommended particularly the construction of special telescopic devices and the combination of an observatory with a physical laboratory.

After testing the atmospheric and other conditions of various possible sites it was determined in December, 1904, to establish an observatory on Mount Wilson, near Pasadena, California; and Professor Hale was appointed director of the enterprise.

The establishment consists of two separate but closely related parts, namely, the observatory with its telescopic equipments and physical laboratory on Mount Wilson; and the office, shops, and physical laboratory in Pasadena. The office and the observatory, although about twelve miles apart, are in intimate connection by means of the telephone.

The observatory proper is equipped with the Snow horizontal reflecting telescope, purchased from the Yerkes Observatory; a tower vertical telescope 60 feet high; and a reflecting telescope 60 inches in diameter, mounted equatorially. The optical and other refined parts of the last two instruments were made

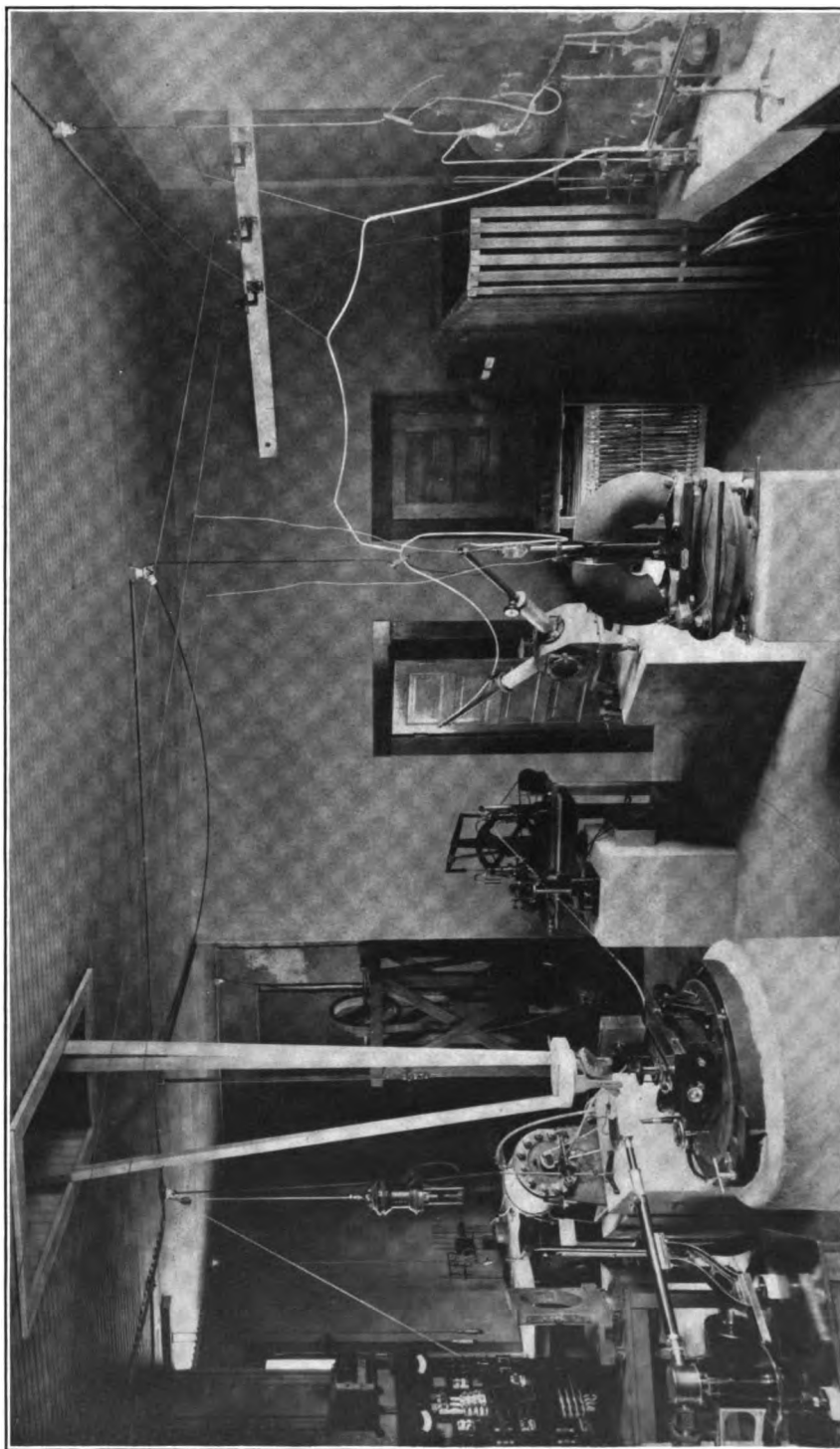
at the shops of the observatory in Pasadena. These telescopes are supplied with various spectrographic, photographic, and other devices for studying the sun and similar stellar bodies. An additional tower telescope, 150 feet high, is now under construction.



Tower Telescope (vertical) and Snow Telescope (horizontal) of Solar Observatory.

In 1906, Mr. John D. Hooker, of Los Angeles, California, generously offered to provide funds for the construction of a mirror 100 inches in diameter for an additional telescope of the reflecting type; and efforts are now being made to secure a disk of suitably homogeneous glass for this purpose.

Mount Wilson, the site of the observatory, is one of the summits of the San Gabriel range, 5,886 feet above sea level, in north latitude $34^{\circ} 13' 26''$ and in west longitude $118^{\circ} 3' 40''$. This site and the privileges of use and improvement of the road leading to the mountain have been leased from the Mount Wilson Toll Road Company of Pasadena for a term of 99 years.



Physical Laboratory of Solar Observatory at Pasadena, California.

The Solar Observatory has the following equipment in buildings :

At Pasadena, California:

- | | |
|--|-------------------------|
| 1. Office and instrument shop. | 3. Hooker building. |
| 2. Erecting house for 60-inch reflector. | 4. Physical laboratory. |

On Mount Wilson:

- | | |
|---|---------------------------------------|
| 5. Steel building for 60-inch reflector. | 18. Engineer's cottage. |
| 6. Snow telescope house. | 19. Night assistant's cottage. |
| 7. 60-foot tower telescope. | 20. Frame house for janitor. |
| 8. Physical laboratory. | 21. Men's house for workmen. |
| 9. Variometer house. | 22. Storage house for provisions. |
| 10. Power house. | 23. Store house at foot of new trail. |
| 11. Pump house. | 24. Water reservoir. |
| 12. Storage-battery house. | 25. Fire-pump house. |
| 13. "Monastery." | 26. Astrophysical Museum. |
| 14. Hooker cottage. | 27. 150-foot tower telescope. |
| 15-16-17. Small frame houses for night observers. | |

NUTRITION LABORATORY.

Director, PROFESSOR FRANCIS G. BENEDICT.

Address, Nutrition Laboratory, Vila Street, Boston, Mass.

The investigation in nutrition to which this laboratory is devoted originated with the late Professor W. O. Atwater, of Wesleyan University. During the years 1903 to 1907 grants were made to him and to Professor Francis G. Benedict to aid in the construction of a respiration calorimeter and to carry on experiments with this apparatus.

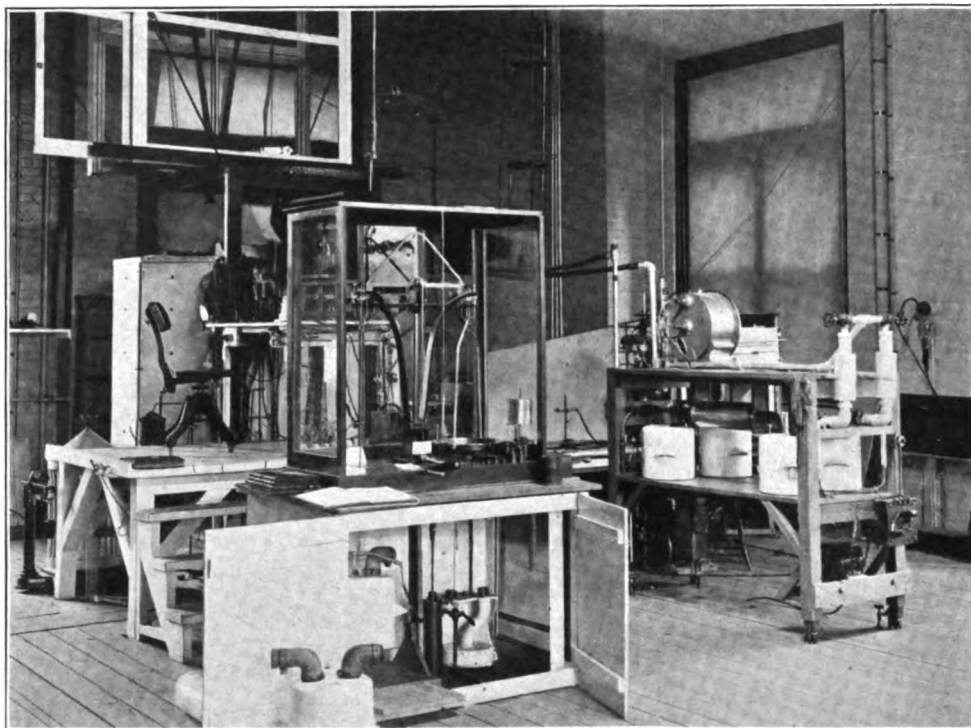


The Nutrition Laboratory, Boston.

With the development and with the successful application of the respiration calorimeter in its perfected form came the need for better quarters and for the undivided time of a corps of investigators in this branch of research.

The construction of a laboratory specially designed for this purpose was authorized in December, 1906, and early in 1907

Professor Benedict was appointed Director. After examination of a number of sites a plot of ground near the Harvard Medical School in Boston was purchased from the corporation of Harvard College, the construction of the laboratory was begun in July, 1907, and it was completed in February, 1908.



Interior View of Nutrition Laboratory.

The laboratory is located in close proximity to the tuberculosis hospital of the House of the Good Samaritan, the New England Deaconess Hospital, and the properties of the Peter Brigham, Children's, and Rotch Hospitals. Through the courtesy of the authorities of Harvard College, heat, light, power, compressed air, vacuum, and refrigeration are obtained from the near-by power plant of the Harvard Medical School. The equipment includes respiration calorimeters, respirometers, special apparatus for control and record of temperatures, apparatus for chemical analysis, a machine shop, and appliances needed in the study of metabolism in both normal and pathological subjects.

DEPARTMENT OF TERRESTRIAL MAGNETISM.

Director, DR. L. A. BAUER.

Address, 405, The Ontario, Washington, D. C.

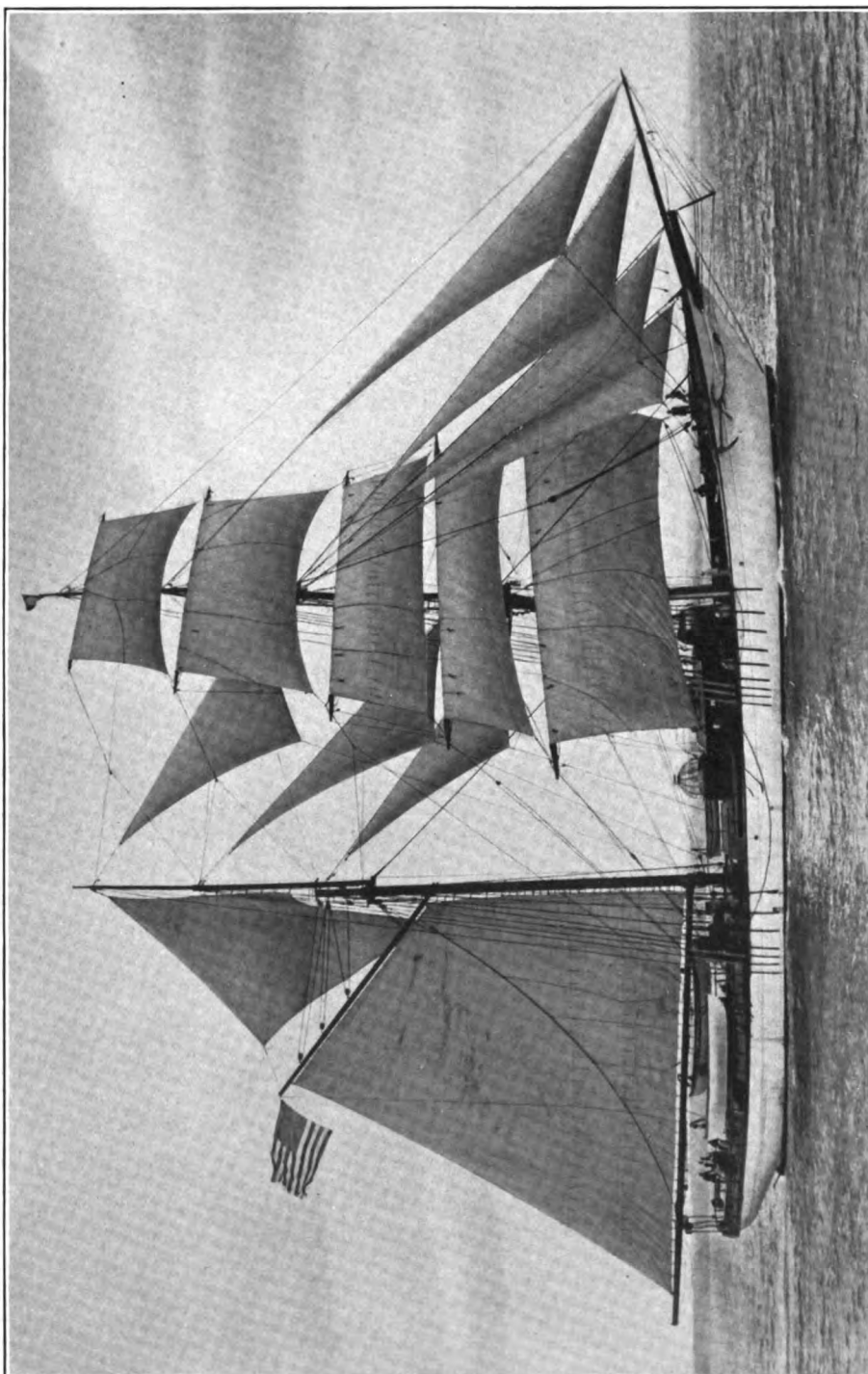
In the year 1902, Dr. L. A. Bauer submitted to the Institution a plan for a general magnetic survey of the earth. This plan was published in the Year Book for 1902. Work on this survey was begun in a tentative way in April, 1904, Dr. Bauer being appointed Director of the Department, which was originally designated as the "Department of International Research in Terrestrial Magnetism."

In December, 1904, more extensive operations were authorized and preparations were made to fit out a vessel for a survey of the Pacific Ocean. Accordingly, the brigantine *Galilee*, of San Francisco, was chartered for this purpose. The *Galilee* continued in this service from August, 1905, until May, 1908.

Prior to July 1, 1906, Dr. Bauer had been in charge of the magnetic work of the U. S. Coast and Geodetic Survey and had divided his time between work of that organization and work for



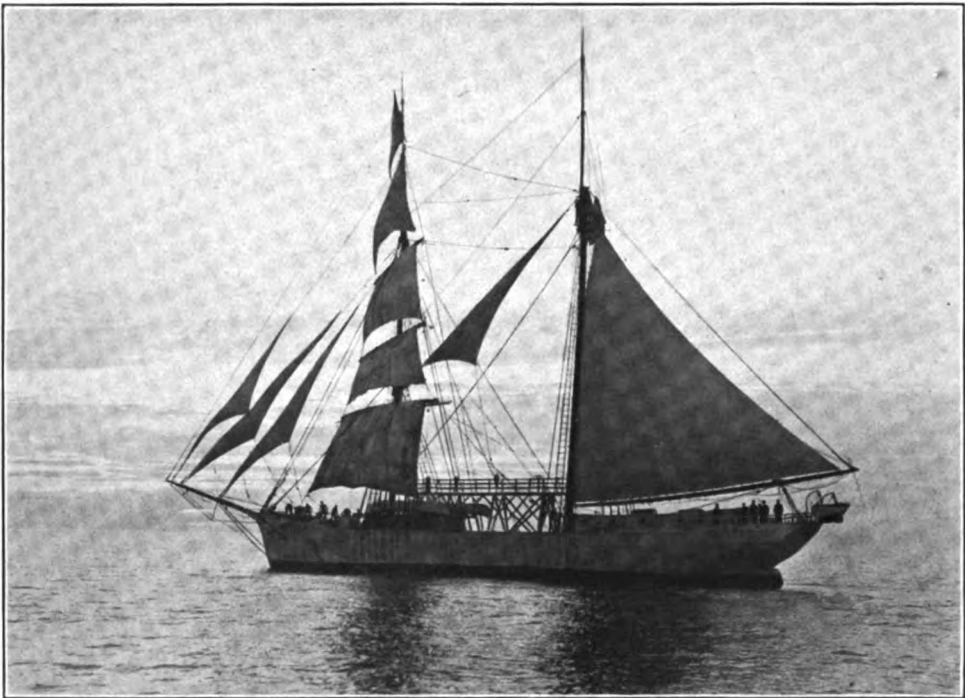
The "Carnegie."



Non-magnetic Ship "Carnegie."

the Institution. Since that date he has given his undivided attention to the development and extension of the researches of his Department.

The success of the *Galilee* in securing observations of the magnetic elements at sea led to the designing and the construction of the non-magnetic ship *Carnegie*. The

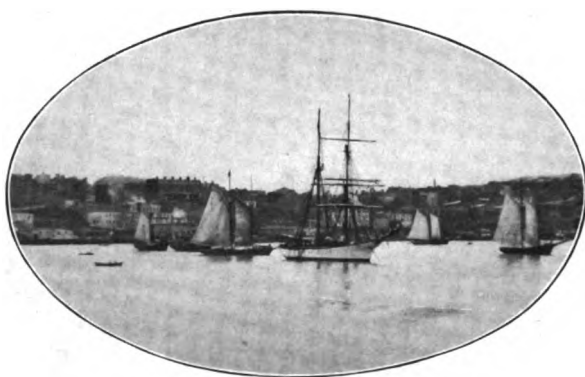


Yacht "Galilee," Department of Terrestrial Magnetism, Sailing from San Diego, California, December 22, 1906, on Her Third Cruise.

contract for this ship was let December 9, 1908; she was launched June 12, 1909; and she set sail August 21, 1909, on her first voyage. She has a length over all of 155 feet 6 inches, 33 feet beam, 12 feet 9 inches depth of hold, 12 feet 7 inches mean draft, and a displacement of 568 tons. She is primarily

a sailing craft, brigantine rigged, but is provided with auxiliary propulsion by means of an internal-combustion engine, for which gas is supplied from a producer. Her novel equipment and freedom from magnetism permit making precise magnetic observations at sea almost as readily as on land.

The work of the Department has extended to every continent, including a total of about forty countries. This and the ocean work accomplished by aid of the *Galilee*, along with the ocean work rendered more readily available by aid of the *Carnegie*, demonstrate the practicability of the aim of the Department to secure a complete magnetic survey of the globe in a limited space of time.



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